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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/706,111	11/12/2003	Rami-Raimund Awad	11885-00004-US	6498
23416 .7590 06/06/2005 CONNOLLY BOVE LODGE & HUTZ, LLP P O BOX 2207 WILMINGTON, DE 19899			EXAMINER DESAL ANISH P	
			ART UNIT 1771	PAPER NUMBER
DATE MAILED: 06/06/2005				

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/706,111	Applicant(s) AWAD ET AL.	
	Examiner Anish Desai	Art Unit 1771	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
 - If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
 - If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
 - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12th November 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-7 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☒ Claim(s) 8-11 are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>03/22/2004</u> . | 6) <input type="checkbox"/> Other: _____ |

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DETAILED ACTION

Election/Restrictions

Restriction to one of the following inventions is required under 35 U.S.C. 121:

- I. Claims 1-7, drawn to a fiber-reinforced laminate, classified in class 428, subclass 411.1.
- II. Claims 8-11, drawn to a process for producing a cured laminate, classified in class 427, subclass 487.

The inventions are distinct, each from the other because of the following reasons:

1. Inventions II and I are related as process of making and product made. The inventions are distinct if either or both of the following can be shown: (1) that the process as claimed can be used to make other and materially different product or (2) that the product as claimed can be made by another and materially different process (MPEP § 806.05(f)). In the instant case the product (i.e. fiber reinforced laminate) can be made by another and materially different process. For example, instead of using high energy light (i.e. radiation) to cure the laminate, use conventional methods of curing such as an oven curing.
2. Because these inventions are distinct for the reasons given above and have acquired a separate status in the art because of their recognized divergent subject matter, restriction for examination purposes as indicated is proper.
3. During a telephone conversation with Mr. Richard Beck on May 19th 2005 a provisional election was made with traverse to prosecute the invention of Group I, claims 1-7 drawn to a fiber-reinforced laminate. Affirmation of this election must be

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made by applicant in replying to this Office action. Claims 8-11 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

4. Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter, which the applicant regards as his invention.

5. Claims 1, 2, 3 and 7 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

6. Claims 1, 2 and 7 mention "high-energy light". It is unclear as to what applicant means by the "high-energy" light. For the purpose of prior art search; examiner is interpreting any suitable radiation curing methods (e.g. UV curing, electron beam curing) that is conventionally employed in curing polymers as high-energy light.

7. Regarding claim 3, applicant has stated " The fiber-reinforced laminate as claimed in claim 2, wherein the polymers A and B2 are selected independently of one another". It is not clear what is meant by "independently". Additionally, it is unclear as

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to what applicant means by "the polymers A and B2" because from the claimed invention, it seems that B2 is a mode by which polymer B polymerizes and not the polymer species. It is respectfully requested that the applicant explain as to what he/she means by "polymers A and B2" and "independently" in response to this office action. For the purpose of the prior art search, examiner is interpreting the recitation "independently" as any one or more random combination of two chemical species listed in the claim 3. For example, one combination may be epoxy acrylates as polymer A and polyether acrylates as polymer B2. The examiner is interpreting polymer B2 as any polymer that can be polymerized by radiation induced free radical chain mechanism.

8. Claims 4 and 5 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

9. With regards to claims 4 and 5 applicant has stated "The fiber-reinforced laminate as claimed in claim2, wherein the polymer B1" and "The fiber-reinforced laminate as claimed in claim 2, wherein the polymers B1" respectively. It is unclear as to what applicant means by "polymer B1" because from the claimed invention, it seems that polymer B1 is a mode by which polymer B polymerizes and not the polymer species. The examiner is interpreting polymer B1 as any polymer that can be polymerized by radiation induced free radical chain mechanism.

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10. Additionally in claim 4, applicant has stated, "if desired contain styrene". It is not clear whether styrene is present or not. For the purpose of the prior art search, examiner is searching for any unsaturated polyester with or without the styrene.

11. Claims 6 and 7 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

12. Regarding claims 6 and 7, applicant claims, "first layer". Additionally, claim 6 mentions "second layer" and "polymer A". There is insufficient antecedent basis for this limitation in these claims. Additionally, it is unclear as to what applicant means by "first layer", "second layer" and "polymer A". The examiner is not giving any patentable weight to the terms "first layer" and "second layer". For the purpose of prior art search, examiner is interpreting "polymer A" as any polymer that can be cured by radiation.

Claim Rejections - 35 USC § 102

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

13. Claims 1,2,6 and 7 are rejected under 35 U.S.C. 102(b) as being anticipated by van der Hoeven (US Patent 4,789,604).

14. Hoeven teaches a decorative panel, which includes a core layer, and layers, which are on one or both sides of the core layer (see Abstract). Thus, a decorative panel of Hoeven's invention has at least two layers. Panels of this type are employed for interior or exterior uses in the building industry, being used as cladding panels or

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self-supporting units (Column 1, lines 7-10). The core layer contains fibers (Column 4, lines 8-10) and it is composed of panels or sheeting made of plastics, for example based on polystyrene (Column 3, lines 51-53). The examiner is equating the core layer containing fiber and polystyrene of Hoeven with the claimed adjacent layer, and the decorative panel with fiber containing core layer as the claimed fiber reinforced laminate. Note that polystyrene is a polymer that can be cured by radiation induced free radical chain reaction of styrene monomer. According to Hoeven, the layer of synthetic resin polymerized by radiation is located right on the surface of the core layer (Column 3, lines 55-57). Thus the synthetic resin containing layer (or layers) which forms an outer layer (or layers) of Hoeven equates to the claimed layer A. Additionally, the synthetic resin contains acrylic acid esters or methacrylic acid esters, which can be, polymerize by radiation (Column 4, lines 52-57). Thus methacrylic acid esters and acrylic acid esters do contain methacrylic group and acrylic group respectively as claimed in claim 1.

15. Hoeven teaches that immediately upon the fiber-containing core layer, or on this underlay layer, there follows, in a preferred embodiment, a layer of synthetic resin polymerized by radiation, which is decorative, i.e., exhibits a particular optical effects or a decorative effect as a result of added dyestuff (Column 4, lines 24-30). The examiner is equating the said decorative layer of Hoeven as a veneer as claimed in claim 6 and 7. Additionally, Hoeven teaches that instead of the decorative layer of synthetic resin, it is also possible to use a decorative layer based on a dyed and/or printed plastic film or based on paper; this is usually composed of pigmented, dyed and/or printed decorative

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paper (Column 4, lines 38-42). The examiner is equating the decorative layer based on dyed and/or printed plastic film as claimed polymer films in claim 6. Note that the plastic is polymer.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

16. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hoeven (US Patent 4,789,604) in view of Nohr et al. (US Patent 5,849,411).

17. The invention of Hoeven is disclosed above. In addition to above disclosed matters of the Hoeven's invention, the core layer in the invention of Hoeven can be composed of a nonwoven fabric or mats, and composed of mineral fibers, glass fibers, plastic fibers or a mixture of fibers (Column 4, lines 7-10). Hoeven gives examples of synthetic resin that can be used in forming **outer layers** and which can be polymerized by radiation induced free radical chain mechanism. These resins include polyester acrylates, urethane acrylates (Column 5, lines 5-10) and epoxy acrylates (Column 5, lines 39-42).

18. Hoeven is silent with respect to teaching the composition of polymer forming core layer as claimed in claim 3. However, Hoeven does teach that the fiber containing core layer contains resin (Column 6, lines 43-47).

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19. Nohr et al. teach a polymer film, polymer coated nonwoven web, and a polymer coated fiber formed by a process wherein an admixture of unsaturated polymerizable material and photoreactor are drawn into a film or coated onto a web or fiber. The film, web or fiber is subsequently irradiated with light to polymerize admixture (see Abstract). Additionally, the invention of Nohr et al. teach a laminated structure comprising at least two layers (Column 3, lines 66-67). The examples of unsaturated polymerizable material include polyester acrylates, epoxy acrylates and urethane acrylates (Column 9, lines 20-23).

20. Regarding claim 3, A skilled artisan would have found it obvious to select urethane acrylates as disclosed in the invention of Nohr et al. and used it in the invention of Hoeven to coat the fibers of the nonwoven fabric forming the core layer. One would be motivated to do this, in order to provide polymer containing core layer and an outer layer such that these polymers can be cured using radiation.

21. Claims 4 and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hoeven (US Patent 4,789,604) in view of Noomen et al. (US Patent 4,164,459).

22. The invention of Hoeven is disclosed above. In addition to above disclosed matters of Hoeven's invention, Hoeven is silent with respect to teaching that the core layer comprises unsaturated polyester which may contain styrene or that the core layer comprises polymers that are selected from allyl group containing polyesters and mixture thereof with unsaturated polyesters based on fumaric acid.

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23. Noomen et al. disclose a UV curable coating composition. The suitable binder for the coating composition is unsaturated polyesters (Column 1, lines 32-34).

Additionally, Noomen et al. teach about the formation of UV curable polyesters binder, which can be synthesized using fumaric acid (Column 1, lines 58-62). Additionally these polyesters are mixed with unsaturated monomeric compounds having allyl groups such as styrene (Column 2, lines 5-9).

24. Regarding claims 4 and 5, a skilled artisan would have found it obvious to use the polymeric binder disclosed in the invention of Noomen et al. and used it in the core layer disclosed in the invention of Hoeven. One would be motivated to do this in order to provide a polymeric binder that can be cured using radiation induced free radical chain mechanism.

25. Claims 6 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hoeven (US Patent 4,789,604) in view of Miller (US Patent 3,616,028).

26. The invention of Hoeven is disclosed above. In addition to above disclosed matters of Hoeven's invention, Hoeven is silent with respect to teaching veneers, polymer films and metal foils.

27. Miller teaches about a one step method of bonding and hardening to a tack-free condition an impregnated over lay of paper or wood veneer to a substrate material in which disadvantages of using precured or prepolymerized impregnated overlays are avoided. In addition, short curing and bonding times are achieved by the use of high-energy radiation, thus avoiding problems of absorption of the bonding material into the

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substrate material resulting in poor bonding, or migration of the polymer or monomer from the impregnated overlay (Column 1, lines 28-37). The inventions can be used to bond overlays to the substrates for use in furniture, countertops, wall paneling, doors and similar materials in easy and direct manner (Column 1, lines 40-42). Miller teaches that in one known method, after curing the impregnated veneer it is bonded to suitable substrates using conventional adhesives (Column 1, lines 16-21). Although, Miller does not explicitly teach that the adhesive used in the known method is curable using radiation. However, Miller teaches that substrate material of his invention is coated to a suitable bonding material, which is capable of polymerizing using high-energy radiation (Column 2, lines 49-53). Thus one of ordinary skilled in the art can use adhesive that can be cured using radiation. The adhesive is considered as a coating as claimed in the claim 7.

28. Regarding claims 6 and 7, a skilled artisan would have found it obvious to use impregnated veneer disclosed in the invention of Miller and bonded the veneer to the core layer disclosed in the invention of Hoeven. One would be motivated to do this in order to provide aesthetically pleasing panel.

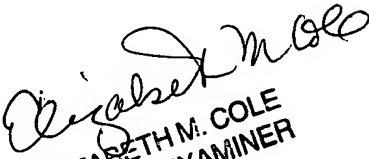
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Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Anish Desai whose telephone number is 571-272-6467. The examiner can normally be reached on Monday-Friday, 8:00AM-4:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Terrel Morris can be reached on 571-272-1478. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


ELIZABETH M. COLE
PRIMARY EXAMINER

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